Frequently Asked Questions

For BPA's Commercial Lighting Calculator

Accompanies Calculator version 2.2

Release notes

Updates and improvements

Version 2.2 comes with significant improvements to the initial version of the Calculator. Improvements include:

- The speed and size of the file have both been improved.
- A new T8->T8HP delamping measure has been added (category A31).
- The ability to select whatever technologies are in the existing and proposed case is now available regardless of whether it is eligible for an incentive. Controls for this are on the main page, as this is optional.
    - NOTE: This will result in more options that will not result in incentives, even when they technically create savings. The offer is specific to certain change-outs, and does not cover every permutation possible.
- Errors experienced by some users have been fixed. If you're still getting an "Error: onEventChange" error, please contact BPA Commercial Lighting staff.
- *Basic Project Details:* Limited pasting functionality. Currently, you can paste space names in the page. See Question 7 for more information
- *Basic Project Details:* If no heating/cooling type is entered, the Calculator now assumes no space heating instead of requiring that to be filled in.
- *Basic Project Details:* In new construction mode, the overall square footage is now a sum of the individual space areas determined by the Space IDs. If the building is actually larger than that, but no measures are installed, for purposes of the calculator, that is irrelevant. Additionally, the total square footage only appears after some data has populated the square footage field in the Space ID grid.
- *Lighting Details:* Quantities and savings are calculated into the aggregate, project-level data only after the entire row has been entered. This will be a slight departure from the user interface of previous versions.

- *Lighting Details:* Improved functionality of the Resize Row button, including resizing the row to the subspace ID as well as the notes fields.

- *Lighting Details:* A new Freeze/Unfreeze button allows the user to lock down the main area of the grid and use the scroll bar to access notes and other areas paste the pageview limitations on most monitors.

- *Lighting Details:* Serial or reference numbers have been added to the rows like on the *Lighting Details Print* page.

- *Lighting Details:* Non-standard measure functionality:

    - If the measure entered is non-standard, you no longer have to start over and re-enter it in the non-standard area. A new button has been added (Move to NonStandard, see question 23) that moves this row to the non-standard measure area.

    - Existing and proposed dropdowns have been removed entirely from the non-standard area, allowing the user to enter anything in either field.

- *Lighting Details:* Non-standard existing cases are now defined by the user. Fixture wattages are now used to determine the baseline of savings. It is now the user's responsibility to enter in enough details in the description section so that their contracting officer can track what has happened. The *Move to Non-standard* button gives a suggested format for entries into this field, which is {type} – {subtype} – {wattage}W – {number of lamps}L.

- *Lighting Details:* Installation types (Equipment column) have been collapsed to simplify the offering and usability of the Calculator. Now, the user has only four options: ExistingFixtures (mostly used for controls or decommissioning), Controls Only, Retrofit (when a fixture is retrofitted with new lamps, new lamp/ballast combinations, or retrofit kits with or without reflectors), and New Fixture. At times, additional items for the user to choose the incentive category may come up due to these changes.

- *Lighting Details:* delamping methodology has now changed. Delamping is available if there is a 25% savings on lineal footage of lamps, not based solely on the number of lamps field. Now, a 2-lamp 8' fixture can be retrofitted with a 3-lamp 4' fixture and delamping incentives will work. See Question 16 for more information.

- *Lighting Details:* the dialogue box that pops up when the user clicks "Print Lighting Details" has been removed.

- *Print Lighting Details:* notes from the *Lighting Details* page have been added to this page. To make changes to the notes, change them on the *Lighting Details* page.

- *Print Lighting Details:* Existing- and proposed measure counts have been added under the Project Summary section to aid with audits.

New Buttons

- Freeze/Unfreeze panes
- Back to top
- Move to Non Standard

New Automation

Some things have been automated to save the user time. There are some significant impacts to how the Calculator is used.

- In New Construction mode, space types are now defined in the *Basic Project Data* page.
    - When that space is selected in the *Lighting Details* page, the space type will auto-fill
- In Retrofit mode, when a user selects *ExistingFixtures* in the proposed case, the line will autofill the items from above so that the user does not have to go through the effort of selecting items with only one option.
    - The number of lamps will still be editable, as will the quantity, so if any delamping or decommissioning is done, it will be recorded for contracting officer approval.

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Main Tab

1. How do I change my password?

The current version of the calculator does not allow the utility to change their own password. This is noted and will be released in future versions. If you would like your password changed, contact BPA staff with your Calculator and the password can be changed.

Applicable Versions: 2.0X (this will be updated when this is changed)

2. What do the different colors mean?

The workbook is formatted to aid the user in understanding what is necessary as far as inputs go and where the user needs to make changes.

- Brown: No further data is needed
- Yellow: Other cells require this to be filled in before they will become active; data is needed here in order to provide an input to other parts of the Calculator. Some of these can be ignored (mostly names and optional information) but some things, such as hours of operation or space IDs should not have yellow items on a row.
- Black : No need to fill this in at this time
- Light blue : This row has been error-checked and works. If this row changes color, it means that options that have been changed have altered the allowable values for the dropdowns in this row and they need to be changed.

Formatting coloration examples:

- Brown:

Rate Class	Energy Rate ($/kWh)	Demand Rate ($/kW)
A	$0.110	$1.26
B	$0.120	$2.00
C	$0.055	$1.75

- Yellow:

ExistingFixtures					

- Black :

- Light blue :

E	ExistingFixtures	3ft T8	Standard Lamp w/ Normal Light Output Ballast		25	2	1
	NewLampAndBallast	ASAD			20	1	1
	Controls	Photocells	panel-mounted	% Reduction in Hours >>	25%		1

Applicable Versions: 2.X

Step 1: Basic Project Data

Tips and Tricks: Group space types

Instead of entering each space type separately, just enter the space types by unique hours and heating types. That will save you time. The Lighting Details sheet has a sub-space ID, use that to enter distinguishing features and room numbers to spaces that are otherwise exactly the same.

Example:

	Daily Hours of Lighting Usage								Space Condtioning		
Space ID	Use whole bldg. info.	Su	M	Tu	W	Th	F	Sa	Use whole bldg. info.	Cooling and Heating	Heating Type
~~Receiving, back~~	~~YES~~	~~0~~	~~9~~	~~9~~	~~9~~	~~9~~	~~9~~	~~0~~	~~YES~~	~~Cooled/not heated~~	~~No space heating~~
~~Room 211~~	~~YES~~	~~0~~	~~9~~	~~9~~	~~9~~	~~9~~	~~9~~	~~0~~	~~YES~~	~~Cooled & heated~~	~~Electric resistance~~
~~Front Office~~	~~YES~~	~~0~~	~~9~~	~~9~~	~~9~~	~~9~~	~~9~~	~~0~~	~~NO~~	~~Cooled & heated~~	~~Electric resistance~~
Conditioned, elec 1805hrs	YES	0	9	9	9	9	9	0	YES	Cooled & heated	Electric resistance
Cooled only, 1805hrs	YES	0	9	9	9	9	9	0	NO	Cooled/not heated	No space heating

Space ID	Quantity	Equipment	Type
Deemed Lighting Measures			
~~Receiving, back~~	~~18~~	~~ExistingFixtures~~	~~T8 4ft~~
		~~ControlsOnly~~	
~~-~~	~~4~~	~~Controls~~	~~Occupancy Sensors~~
~~Room 211~~	~~4~~	~~ExistingFixtures~~	~~T8 4ft~~
		~~ControlsOnly~~	
~~-~~	~~1~~	~~Controls~~	~~Occupancy Sensors~~
~~Receiving, front~~	~~4~~	~~ExistingFixtures~~	~~T8 4ft~~
		~~ControlsOnly~~	

	~~1~~	~~Controls~~	~~Occupancy Sensors~~
Cooled only, 1805hrs	18	ExistingFixtures	T8 4ft
Recv, back		ControlsOnly	
	4	Controls	Occupancy Sensors
Conditioned, elec 1805hrs	4	ExistingFixtures	T8 4ft
Room 409		ControlsOnly	
	1	Controls	Occupancy Sensors
Cooled only, 1805hrs	4	ExistingFixtures	T8 4ft
Recv, fr		ControlsOnly	
	1	Controls	Occupancy Sensors
Conditioned, elec 1805hrs	2	ExistingFixtures	T8 4ft
Room 211		ControlsOnly	
	1	Controls	Occupancy Sensors

3. Do I really need to enter the state and address information?

Yes. Many of the drop-downs and space types are determined by the site's state, especially when dealing with New Construction. If you do not fill in the site information, you may have a lack of space types which will compromise functionality throughout the Calculator.

Applicable Versions: 2.0X

4. Why do I need to enter the operating schedule?

The operating schedule determines the usage of the lighting in each different zone of the building. This allows you to have the control over different areas of the building which more accurately estimates savings. Without the operating schedule, the *hours* portion of kilowatt-hours cannot be calculated.

5. Why can't I enter the annual hours directly?

This is done by design. BPA felt that if the contractor or utility couldn't determine the operating schedule, there was likely something wrong with the project. It is likely to your benefit that you fill out the operating schedule for it will provide the most accurate usage basis for kWh savings. Please fill this out accurately and don't try to doctor the numbers to fit into the annual hours you would expect; simply record what is on the ground. This will help both BPA and the utility in gathering the most accurate usage data to determine the cost effectiveness of our programs, which is a requirement they both have in order to provide the most value to ratepayers.

6. Whenever I make a change to HVAC or space types, the rest of the Lighting Details HVAC adjusted column does not automatically update.

The Calculator is fairly self-aware, but not quite this much. In order to update HVAC types, reselect the space type and it will readjust the HVAC savings for that row. The Calculator isn't intended to deal with a shift mid-stream like this: a real project has only one HVAC type and it doesn't change on the fly in reality. Please consider that when doing your testing. If you do make retroactive changes to HVAC or space types, use the 'Update Lighting Details' button on the *Lighting Details* page to reflect savings changes.

Applicable Versions: 2.X

Update

In versions 2.2 and later, if the user deletes or changes any space types, the *Lighting Details* page will turn that space type yellow, letting you know that needs to be updated (provided that the line has been updated or the 'Update Lighting Details' button has been used).

Applicable Versions: 2.2 and later

7. Can I paste into the Calculator?

Limited pasting functionality has been introduced into version 2.2. Many of the cells are protected so that the formulas that do calculation or are referenced by other parts of the Calculator maintain consistency. On the Basic Project Data page, the notes fields can now be pasted into, as well as the SpaceID field. There are a couple of restrictions for how it is used. These restrictions are based on the restrictions of Excel; they are not imposed on users by BPA on purpose.

Limitations

- **When pasting text from another document** (Word, Notepad, an email… some application other than Excel), you will only be able to paste into one cell. To do that, **you must double-click that cell** before pasting text; otherwise Excel will give you an error message. You'll know you've done it right when you get a blinking cursor in that cell.

- When pasting from another Excel document (such as a previous version of a 2.X calculator), you will not need to double-click. Just select the cells as you would with any other Excel document. Hour grids can be pasted into version 2.2. There may be errors for cells that are merged. The development team has done its best to control for this, but every possibility cannot be accounted for.

- The user is responsibility for the accuracy of this data. Note that columns from one version to another are not necessarily in the same order and pasting from one version to another requires care and attention to detail. Space IDs, hours, and notes should probably be pasted in three separate steps to avoid errors. The user is responsible for the maintenance of correct data.

Step 2: Lighting Details Tab

Tips and Tricks: Copy Specs to New Row Below

When you have a large, mostly uniform job, instead of entering each item line by line, use the 'Copy Specs to New Row Below' button and edit the details.

Enter one line

Space ID	Quantity	Equipment	Type	Sub-type		Lamp Wattage	Lamps per Fixture
Deemed Lighting Measures							
Cooled only, 1805hrs	18	ExistingFixtures	T12 4ft	Energy-efficient Ballast		40	2
	14	NewLampAndBallast	T8 4ft	Normal Light Output Ballast		32	2
Recv, back	4	Controls	Occupancy Sensors	ceiling-mounted	% Reduction in Hours >>	25%	

Use Copy Specs to New Row Below button

This is at the top of the Lighting Details sheet. Click that three times and make your edits (these edits were highlighted in yellow):

Example:

Space ID	Quantity	Equipment	Type	Sub-type		Lamp Wattage	Lamps per Fixture
Deemed Lighting Measures							
Conditioned, elec 1805hrs	18	ExistingFixtures	T12 4ft	Energy-efficient Ballast		40	2
	18	NewLampAndBallast	T8 4ft	Normal Light Output Ballast		32	2
Room 409	4	Controls	Occupancy Sensors	ceiling-mounted	% Reduction in Hours >>	25%	
Conditioned, elec 1805hrs	12	ExistingFixtures	T12 4ft	Energy-efficient Ballast		40	2
	12	NewLampAndBallast	T8 4ft	Normal Light Output Ballast		32	2
Room 411	1	Controls	Occupancy Sensors	ceiling-mounted	% Reduction in Hours >>	25%	
Conditioned, elec 1805hrs	10	ExistingFixtures	T12 4ft	Energy-efficient Ballast		40	2
	9	NewLampAndBallast	T8 4ft	Normal Light Output Ballast		32	2

Room 201	1	Controls	Occupancy Sensors	ceiling-mounted	% Reduction in Hours >>	25%

Tips and Tricks: Move to Non-Standard

Not all measures are anticipated by BPA or your utility. In that case, measures that save energy can be claimed, they just need approval by your utility. A new button has been added to speed up your process so that if a measure is not a part of the standard offering, you can still claim it quickly and easily.

8. While working in the Lighting Details Tab, I can't seem to get the measures to work. The limited type and drop-downs are preventing me from finding the measure I need to install?

- A feature in versions 2.2 and later allows the user to change this setting on the main page. Click the *main menu* button and select 'No' on the configuration element *Limit retrofit proposed equipment to measure matches?*.

- Check the delta wattage for this. Make sure that it is actually going to produce some significant savings. There is a relationship between existing measures and the fixtures and bulbs allowed as replacements for that existing fixture. For example, a 32W T8 purposefully lacks a wealth of options for replacement, both due to a lack of savings and the fact that it is one of the most efficient technologies available currently.

- Make sure you're using the proper fixture replacement variable (A NewFixture is a replacement of the entire fixture; NewLampsAndBallast are generally done in applications where you are keeping the existing fixture but simply replacing lamps; ControlsOnly is for installations of Occupancy Sensors or other automated usage controls.)
  Update: This has been reduced in version 2.2 to just Retrofit, ControlsOnly, or NewFixtures.

- Make sure your *space type* is chosen and is set up in the Basic Project Details tab (more information **Error! Bookmark not defined.**).

- If you believe it will net savings (especially over the course of the project), enter the project in the BPA-Qualified (custom) section of the Calculator. That will give you the correct savings as a workaround.

- If this is a persistent issue, this may be a problem with the Measure List not allowing a certain combination of lighting. Efforts are being made to reasonably liberalize the Measure List so that contractors can implement typical projects.

Reason: The lighting calculator's intention is to pay incentives for savings. The old calculator did not have any checks in able to ensure this, so 2 delta-watt projects would make it through. This has been changed this, so low-wattage change-outs aren't being paid for. If a contractor wishes to use this tool as a sales tool, the custom field will handle the oddities and BPA or the utility will then be able to have a discussion whether they are willing to pay an incentive for this project.

Note: This has been liberalized quite a bit in version 2.1 so this issue won't come up as often.

Applicable Versions: 2.X

9. Why are the energy rates incorrect? OR Why are there no energy rates?

The utility determines the energy rates. If these are found to be inaccurate, do the following steps:

Contractors

- Select a different *Rate Class* to see if one fits your expected rate
- Select USER DEFINED in the *Rate Class* field on the Lighting Tab
- Enter energy and demand rates.
- If that doesn't solve the issue, contact your utility to make sure that they have reflected the correct utility rates for the program, as this Calculator came stocked with some default energy and demand rates.

Applicable versions: 2.079 and later

Utility

- To change the *Rate Class,* log in to the *Utility Controls* by going to the *Main Menu* (via clicking the *Main Menu button* at the top of the screen and then clicking the *Utility Controls* button on the bottom right corner of the screen.
- Log in by using the password for your workbook.
- After the 'Text to display on customer offer letter…' section is a place where you can change the descriptor for the *Rate Class*, the energy rate ($/kWh) and the demand rate ($/kW).

Example

Rate Class	Energy Rate ($/kWh)	Demand Rate ($/kW)
A	$0.110	$1.26
B	$0.120	$2.00
C	$0.055	$1.75

10. The pop-up directions are in the way! I can't select a drop-down. How do I fix this?

Simply click the directions and drag (click, hold down, and move) them to a different area, such as the top right corner of the screen. That will permanently move them for this session of the workbook. This

was recognized as problematic in older versions of the program, so the directions on the *Lighting Tab* are now in the top-right section of the workbook next to the BPA logo.

Applicable Versions: Basic Project Data: 2.0X, Lighting Tab: 2.07X

11. I started with a fresh calculator and there is nothing to select in the Lighting Tab. What's wrong?

The dropdowns for the *space types* are dependent upon the Basic Project Data building information entered in that section. It is recommended that you work through the workbook from the beginning (or left to right with respect to the menu buttons at the top of the screen). Start with the *Basic Project Data* and fill in the project details.

Applicable Versions: 2.0X

12. Why can't I maneuver between tabs in the Calculator? OR I clicked the Lighting Tab and Excel wouldn't allow me to go there.

Enable your macros

- In Excel 2007, this is usually done just below the ribbon by clicking 'Options' when the security warning comes up.
- In Excel 2003, this is done by going to Tools->Security and setting it to Medium. You then have to restart Excel 2003. When you bring up the Calculator, you'll want to click 'Enable macros'.

Applicable Versions: 2.0X

13. How do I add, delete, or change rows?

At the top of the Lighting Tab, there are buttons that control adding, clearing, and deleting rows. You can add rows, both one by one or add multiple rows using the respective buttons. Many of the normal Excel controls are turned off, disallowing the user to make changes to certain areas. These functions should help you control your workbook.

Applicable Versions: 2.0X

14. When I use the Resize Row button, nothing happens?

The resize row button is intended to resize the row based on the contents of the Notes field (to the far right). Some users have noticed that the sub-space marker doesn't affect the resizing of the row. That is a correct observation. The sub-space field was added and the developers failed to have that cell be a part of the function to resize the row. This is now a known issue and will be fixed in an upcoming version of the Calculator.

Workaround

In order to resize the row, use the notes field and fill it up. Then it the resize row button until it works resizes properly.

Applicable Versions: 2.1X

15. How do I upload my logo?

Only utilities can change the logos. To do so, click Main Menu and then click Utility Controls. Enter your password and then click the Unlock All Tabs button. This will make logos editable.

In Excel 2003

A utility can insert an image anywhere they want

It is recommended that you minimize the image file size to avoid ballooning the calculator file size – an easy way to do this is by using the free online service:
http://www.imageoptimizer.net/Pages/Home.aspx

- Select box that says "Add Logo Here" by clicking on the border of it (not inside the box)
- Right click on box
- Go to Format AutoShape...>>>Colors and Lines>>Fill-Color>>Fill Effects>>Picture
  [note, if you right click on the box while your cursor is inside, rather than on the border of the box, you only get options to format the text, not the fill of the box]
- Select the image you want to use
- Delete the text "Add Logo Here" from the box, and remove the border

In Excel 2007

A utility can insert an image anywhere they want

It is recommended that you minimize the image file size to avoid ballooning the calculator file size – an easy way to do this is by using the free online service:
http://www.imageoptimizer.net/Pages/Home.aspx

- Select box that says "Add Logo Here" by clicking on it
- Right click on box
- Go to Format Shape and select "Picture or texture fill"
- Select "Insert from">> "File"
- Select the image you want to use

- Delete the text “Add Logo Here” from the box, and remove the border

16. How do I decommission fixtures or delamp fixtures?

Decommissioning a fixture

- For *deemed measures*, enter the existing fixture in the *existing fixture* row.
- The next step is to put the *proposed measure* in as the measure type set to *Existing Fixture*. When you do that, you will only have the option to enter the existing fixtures’ attributes via the drop-downs.
- For *quantity*, enter the number of existing fixtures remaining.

Example:

Space & Measure		Type	Sub-type	Lamp Wattage	Lamps per Fixture	Quantity
Deemed Lighting Measures						
Front Office	ExistingFixtures	4ft T12	ES Lamp w/ Magnetic Ballast	34	4	**2**
	ExistingFixtures	4ft T12	ES Lamp w/ Magnetic Ballast	34	4	**0**
	Controls	None				
Front Office	ExistingFixtures	4ft T12	Standard Lamp w/ Magnetic Ballast	40	4	**3**
	NewLampAndBallast	4ft T8HP NLO	High Performance - Normal Light Output Ballast	25	4	**3**
	Controls	None				

- 5 Fixtures are in need of replacement. They are replaced by 3 new fixtures and 2 fixtures are being decommissioned.
- In the first row, enter the *existing fixtures* with a *quantity* of 2 (the quantity to be decommissioned)
- Use the button at the top to *‘Copy Specs to New Row below’*. This copies the existing fixture to a second line to save on time.
- Enter *Existing Fixtures* on the proposed line of the first item with a *quantity* of 0 to decommission the 2 fixtures.

- Enter the *Measure Type* option on the next row (the row you copied) with the *quantity* of 3 (in the case of just this example; you can use whatever relevant figure is in play) for the existing fixture and the installed item.

Delamping

Versions 2.2 and later have changed delamping methodology to more accurately reflect what is done in the field.

When a fixture is delamped, the Calculator now uses the quantity of fixtures multiplied by the number of lamps multiplied by the lineal feet to come up with the basis for calculation.

Example:

A 5 2-lamp, 8' T12 fixtures now qualify for a delamping incentive when replaced by 9 2-lamp 4' T8HP fixtures. Similarly, if those same fixtures were replaced with 5 3-lamp, 4' T8HP fixtures, the measure would also be eligible for a delamping incentive.

Versions 2.1X have integrated delamping into the Calculator.

To delamp an existing fixture, use simply select the technology you wish to install and include fewer lamps per fixture.

17. Why can't I select T8 HP from a T8 baseline?

This issue has been resolved in version 2.2. The restriction is that delamping is required. See question 16 for more information on delamping.

Normally, BPA doesn't pay an incentive on technologies that save a minimal amount of energy, and a T8 32W retrofit to a T8HP 32W saves a minimal amount of energy. But, there is no way for the Calculator to know ahead of time that you intended to delamp in this situation, and therefore this is a valid question and is currently an outstanding error that will be fixed in the next version of the Calculator.

As a workaround, you can use the non-standard section to input this measure.

Example

Non-Standard Lighting Measures (BPA pre-approval required)*[1]					
Retail Floor	ExistingFixtures	T8 4ft	Normal Light Ouptut ballast	32	4
	NewLampsAndBallast	T8HP 4ft High-performance, Normal Light Output Ballast, delamp		32	2

- Enter the *existing fixture* information

[1] Note: Delamping does not require pre-approval from BPA.

- Select the installation type and write 'Delamping' in the description field. Enter the *lamp wattage* and the new *lamps per fixture*. If you'd like to correct for ballast factors, enter the final wattage in the wattage category and divide it by the number of lamps by selecting the next cell over. For example, a high-performance 2-lamp T8 4ft fixture only uses 55W, so instead of entering 32W in the wattage field, enter "=55/I46[or whatever the cell that has the number of lamps in it]". If you're decommissioning look at the directions for decommissioning the fixture (see Decommissioning).

Applicable Versions: 2.1003 and earlier

18. Why aren't the kWh savings being calculated?

- In version 2.2 and later, you have to fill in the existing *as well as the proposed* in order for the savings to populate. This was done in response to some calculation errors found due to incomplete rows being entered, but still affecting project-level data.

- Have you entered the HVAC types for your spaces? KWh are derived from both the fixture wattages and the HVAC interaction. If you haven't filled out the *Basic Project Data* tab before entering the *Lighting Details* tab, chances are you won't be getting any savings.

- Make sure that the *Space type* is selected. Formatting of the *Lighting Details* tab has been helpful in guiding the user in how to use the tab and in what order, but in the event that you can see the *Type and Subtype fields* without the *Space* being filled in, make sure that the *Space and Measure Type* items are filled in and all the items are complete and formatted as light blue (which means complete) before expecting a proper calculation of savings

- Older versions of the calculator had an error with respect to unconditioned spaces not calculating savings. If you encounter this, please write us up a bug report (found at the end of this document).

Applicable Versions: 2.06X

19. Why isn't the deemed measure incentive correct?

This Calculator is intended to be customizable. If incentives aren't correct on your Calculator, the utility should change the values for those incentives.

Utilities

- To make changes to incentive values, go to the *main menu*

- In the bottom-right corner under *modify Calculator*, click *Utility Controls* and enter your password.

- Scroll down to *Incentives.*

- This will look a lot like the program offering. By default, the *Utility incentives* (in yellow) are set to the *BPA Incentive per Unit.*

- Make any relevant changes to your incentives.

Contractors

- If you find an error in the incentive amount (either low or high), please contact your utility contact and alert them to the error.

Applicable Versions: 2.X

20. What are controls all about?

Controls are put in place to decrease usage, rather than wattage. By default, the system is currently set up to assume a 25% savings. If you change this value, please be prepared to have some reasonable means to justify the change. There are several different technologies available.

- Occupancy sensor: An occupancy sensor can be of multiple types, such as an infrared sensor that detects motion, a carbon dioxide sensor that detects changes in CO_2 and therefore occupancy, or other methods that may be integrated into an energy management system (EMS)

- Photocells: Photocells are usually equipped in outdoor applications where, instead of using a timer, they control the operation of the light based on the amount of ambient light in the area (usually this is sunlight)

- Timers: Timers are simply programmable or manual timers that turn the lights off once the timer reaches zero or is programmed to shut off.

- Bi-level: Bi-level systems allow a portion of the lights to be shut off or dimmed.

Applicable Versions: 2.X

21. How do I apply one set of controls to multiple lines?

Sometimes, you may need to enter in several different lines for a particular space, but you only have one occupancy sensor for the entire space. Not to worry. For the first line item in that space, enter '1' as your quantity for the control and select the control type. For each subsequent line, simply enter '0' in the quantity and continue to select the control type for that room.

This results in an accurate tracking of your savings as well as an accurate payment for the controls, as the payments are a function of the quantity of controls installed, while the savings are a function of the *percent reduction hours>>* field.

Example

	Quantity	Equipment		Lamp Wattage	Lamps per Fixture		kWh/year - Adjusted for HVAC	Maximum Eligible Rebate*
Deemed Lighting Measures								
Office	2	ExistingFixtures		40	4	Baseline	1,237	
	2	NewFixtures		32	3	Proposed (with controls)	435	$32.00
	1	Controls	% Reduction in Hours >>	25%		**Savings or percent increase**	**802**	$28.00
Office	2	ExistingFixtures		40	4	Baseline	1,237	
	2	NewFixtures		32	3	Proposed (with controls)	435	$32.00
	0	Controls	% Reduction in Hours >>	25%		**Savings or percent increase**	**802**	$0.00
Office 3	2	ExistingFixtures		40	4	Baseline	1,237	
	2	NewFixtures		32	3	Proposed (with controls)	435	$32.00
No controls		Controls				**Savings or percent increase**	**657**	

Applicable Versions: 2.X

22. Can I use this Calculator across multiple utilities?

It is intended that each Calculator be associated one-to-one with a utility. Theoretically, this calculator can be used across utilities, but it is not recommended because each utility has control over the measures offered and it is BPA's preference to let the utilities determine the details of their programs.

23. How does the Move to Non-standard button work?

The Move to Non-standard button simply takes the measure entered from the standard grid and adds a new row to the non-standard measure area. The non-standard measure area is below the standard measure area. When this button is pressed, it takes the current row and moves it to the non-standard area. Do be careful to make sure you have the right row selected, as this function cannot be undone.

Applicable Versions: 2.2X and later

24. Why doesn't the measure I enter get an incentive?

There are several reasons for this case. Without going into an exhaustive list, there are a few things that you can check that will help with this.

The standard measure area is a predetermined list of existing and proposed technologies. If your particular combination doesn't fit within those constraints, a standard offer won't come up. The first thing you'll want to check is if the baseline and proposed technologies match the standard offer. To see this, click the *Program Offering* button and compare it with what your particular measure combination.

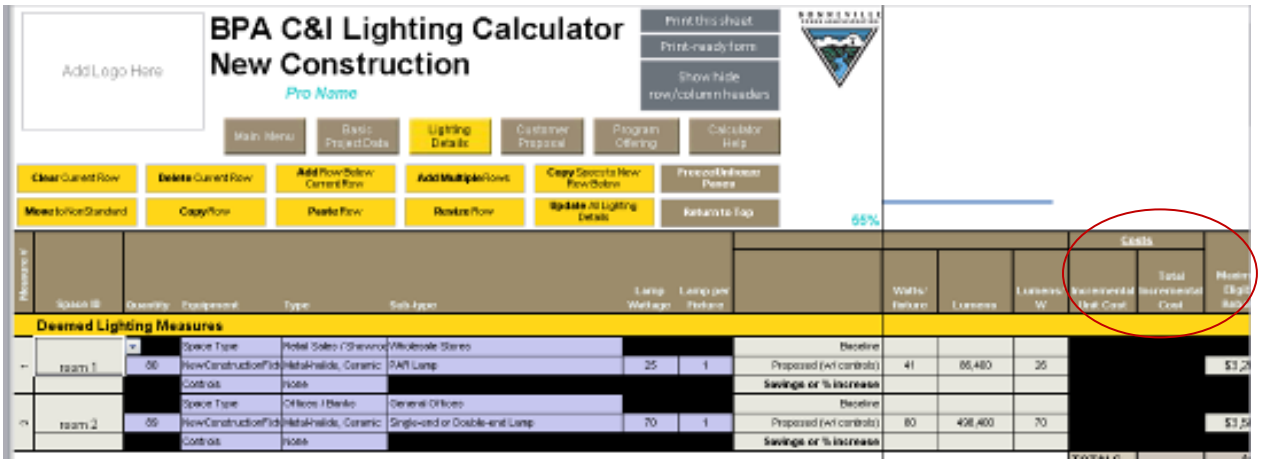
Another possibility is that you've configured the Calculator to allow any combination, even combinations that don't offer incentives. Click the *Main Page* button and make sure that 'yes' is selected and try again. That will limit most proposed measures to ones that have an incentive associated with them.

If that still doesn't work, you can call BPA for technical support. You can also move measures to the non-standard area very easily. Those measures are taken on a case-by-case basis and require approval from BPA. Be mindful that the goal is to deliver energy savings.

Applicable Versions: 2.2X and later

25. Why can't I see the unitary costs? OR How do I enter project costs, since the Calculator requires project costs?

In version 2.2, a feature was added that allows the user to click the 'Costs' header, which transports the user to the project costs part of Lighting Details, further down the sheet.



Next to the cost specification identifier, the user has a choice for two options: *itemized* or *total project costs*. If the user selects *itemized*, the *Lighting Details* grid opens up the itemized fields for entry and doesn't use *Total Project Cost* for the basis of cost calculations.

Lighting Details Print Tab

Print-ready form

The *Lighting Details Print* page was created for auditors and contractors to be able to print out the necessary details of the project. It is accessible through the 'Print-ready form' button on the *Lighting Details* tab.

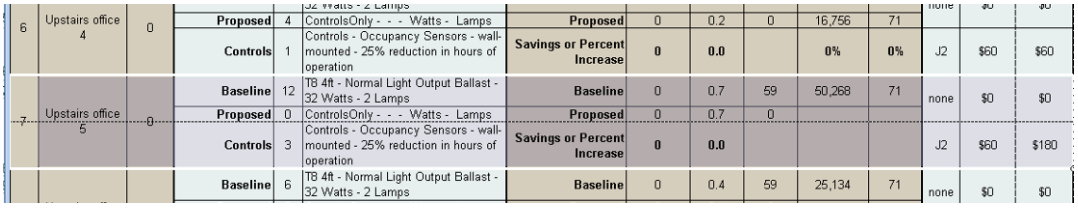
26. When I print this out, a row splits up over a page. How can I fix this?

Excel's strength is not in printing, but this can be easily fixed by manually controlling what it is you want to print.

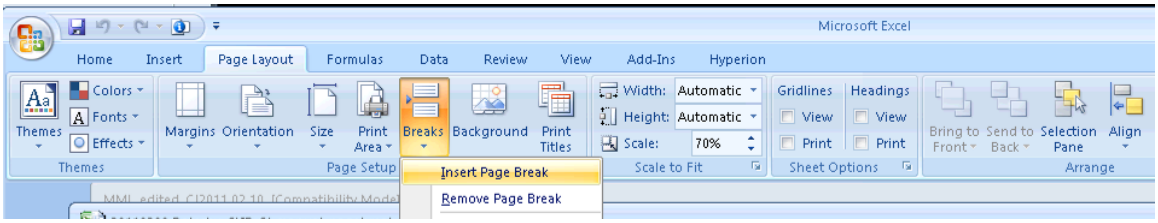
In Excel 2007

First, you have to print preview to see where the pagination is done automatically. To do that:

- Click the Office/Window button in Excel (it is the red, blue, yellow, and green flower-like icon in the top-left of the application next to the save button above the command ribbon). Select 'Print' and then 'Print Preview'.
- Close the Print preview after seeing where the automatic pagination will happen.
- Now you will see dotted lines surrounding parts of the workbook. Those are pagination markers. When one is in the middle of a row you would like to keep together, select that row by dragging your cursor from the first cell to the last cell in that row.



- Select 'Page Layout: Breaks: Insert Page Break from the ribbon. This will manually page break *above* the selected item.

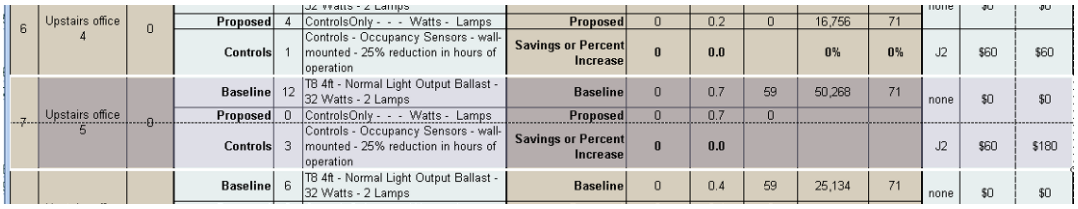


- This will move the dotted line to the thick black line above the row. You will only be able to see one-pixel white dots in regular intervals.
- Once you have completed this, print your document and it will paginate as you directed it to.

In Excel 2003

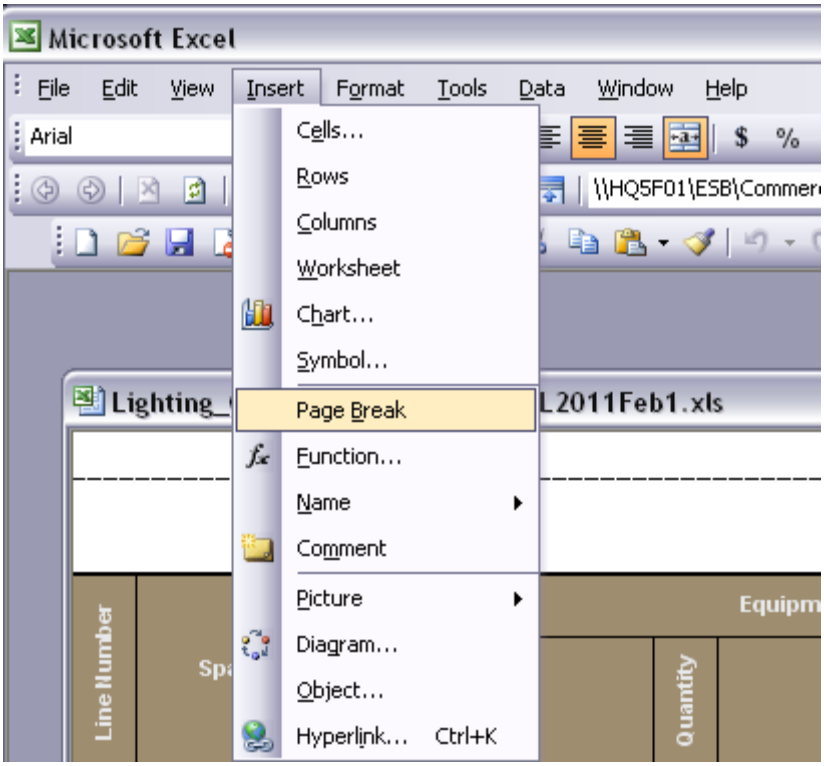
First, you have to print preview to see where the pagination is done automatically. To do that:

- Click File: Print and hit enter
- From the dialogue box that comes up, click 'Preview' in the bottom left corner.
- Close the Print preview (the close button is at the top of the preview) after seeing where the automatic pagination will happen.
- Now you will see dotted lines surrounding parts of the workbook. Those are pagination markers. When one is in the middle of a row you would like to keep together, select that row by dragging your cursor from the first cell to the last cell in that row.



6	Upstairs office 4	0	Proposed	4	ControlsOnly - - - Watts - Lamps	Proposed	0	0.2	0	16,756	71								
			Controls	1	Controls - Occupancy Sensors - wall-mounted - 25% reduction in hours of operation	Savings or Percent Increase	0	0.0		0%	0%	J2	$60	$60
7	Upstairs office 5	0	Baseline	12	T8 4ft - Normal Light Output Ballast - 32 Watts - 2 Lamps	Baseline	0	0.7	59	50,268	71	none	$0	$0
			Proposed	0	ControlsOnly - - - Watts - Lamps	Proposed	0	0.7	0					
			Controls	3	Controls - Occupancy Sensors - wall-mounted - 25% reduction in hours of operation	Savings or Percent Increase	0	0.0				J2	$60	$180
			Baseline	6	T8 4ft - Normal Light Output Ballast - 32 Watts - 2 Lamps	Baseline	0	0.4	59	25,134	71	none	$0	$0

- Insert: Page Break to insert a page break above the selected area.



- This will move the dotted line to the thick black line above the row. You will only be able to see one-pixel white dots in regular intervals.
- Once you have completed this, print your document and it will paginate as you directed it to.

Custom Tabs

27. The Custom Tab is blank. How can I make changes?

The Custom Tabs are intended for utility use to use however they see fit to aid in running their programs.

Utilities

- To make changes to any custom tab, go to the *main menu*
- In the bottom-right corner under *modify Calculator*, click *Utility Controls* and enter your password.
- At the top of the screen, click 'Unlock All Sheets'. This will unlock all the sheets available to you as a utility.
- Edit the custom tab you wish. Upon distribution of the Calculator, that sheet will be locked by default. If you would like contractors to fill in anything, make sure the cells you would like data in are unprotected.
- To unprotect cells, hit ctrl+1, click the 'Protection' tab, and uncheck 'Locked' from those items you wish contractors access to
- It is recommended that you format these cells in a way to highlight that they are the ones that can accept input. The calculator tends to use a light yellow formatting for that generally.

Applicable Versions: 2.0X

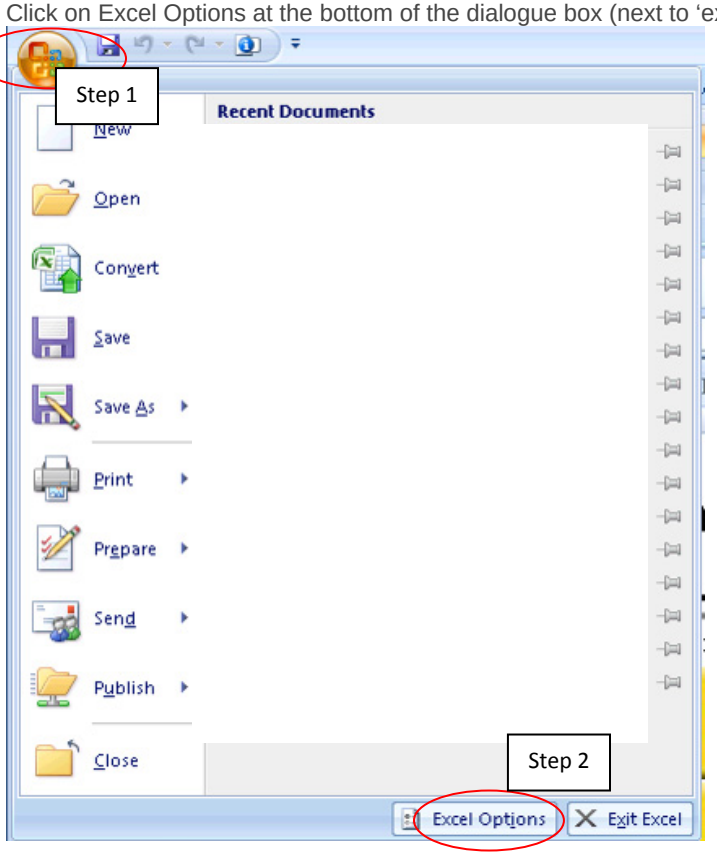
Macro and system issues

28. Whenever I click the buttons, I keep getting a macro error warning: Run-time error '5', invalid procedure call or argument. How can I fix this?

This is because your Excel security settings are set to disallow macros by default. The Calculator functions via Visual Basic (VBA) macros, and therefore needs to be allowed to run them.

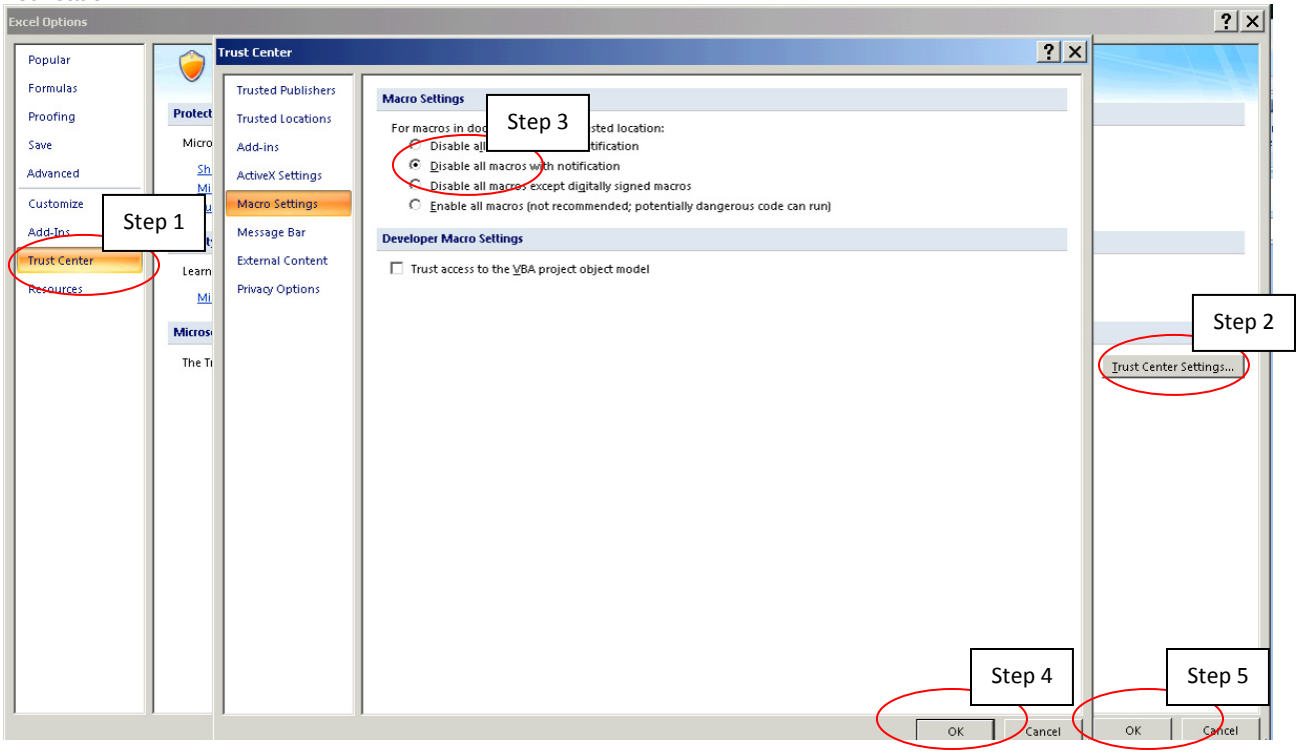
For Excel 2007

- Left-click on the Office Button (top left of the application)
- Click on Excel Options at the bottom of the dialogue box (next to 'exit Excel')

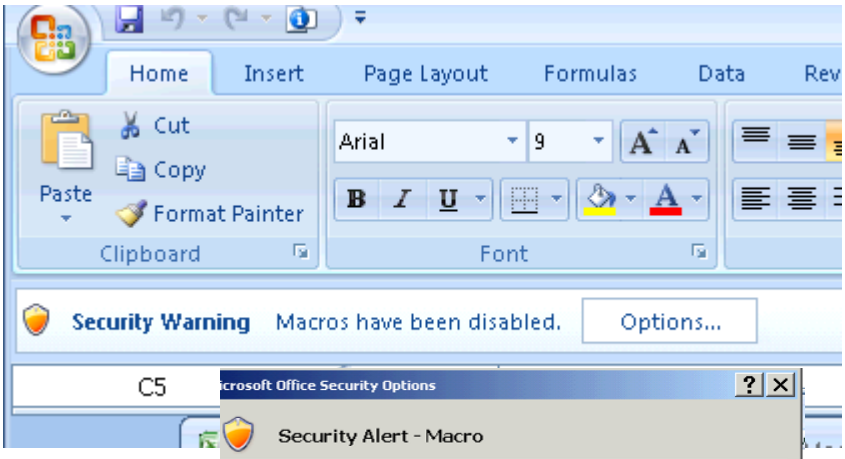


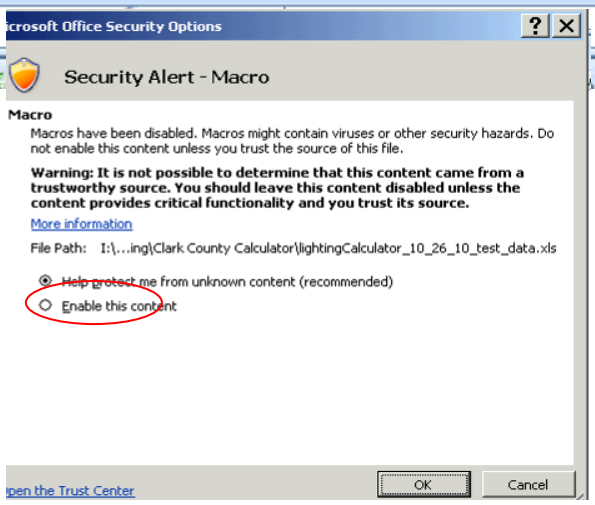
- Click on Trust Center
- Click Trust Center Settings

- Select the radio button that says ‘Disable all macros with notification’



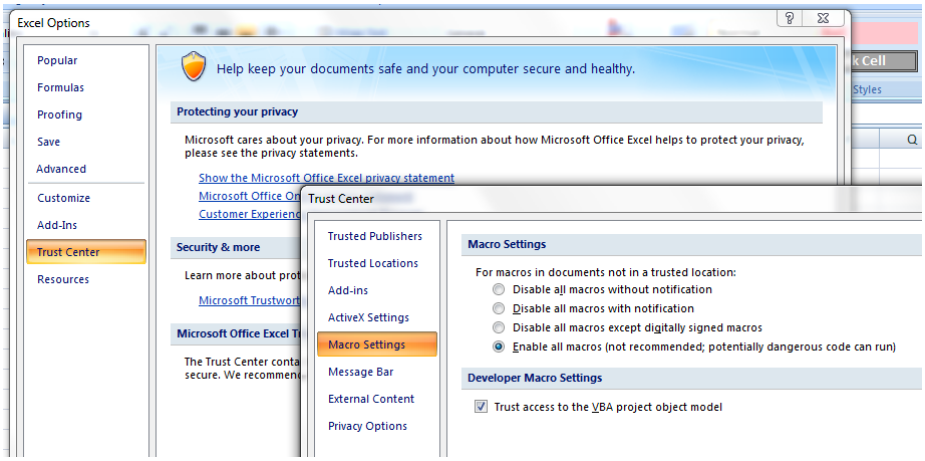
- Click OK, and the next OK.
- Restart Excel and open the Calculator.
- When you start up the Calculator, you should now get a ‘Security Warning’ under the ribbon
- Click the ‘Options…’ button
- Click ‘Enable this content’, followed by OK.
    - This enables macros to work for this document.
    - You will need to enable macros every time you open a Calculator in order for it to work.





If this doesn't work, try the more extreme version:

- Left-click on the Office Button (top left of the application)
- Click on Excel Options at the bottom of the dialogue box (next to 'exit Excel')
- Click on Trust Center
- Click Trust Center Settings
- Click 'Enable all macros (not recommended, potentially dangerous code can run)'
- Click Trust access to the VBA project object model
    - This setting is for developers and is used to deliberately lock out or allow programmatic access to the VBA object model from any Automation client. In other words, it provides a security option for code that is written to automate an Office program and programmatically manipulate the Microsoft Visual Basic for Applications (VBA) environment and object model. This is a per user and per application setting, and denies access by default. This security option makes it more difficult for unauthorized programs to build "self-replicating" code that can harm end-user systems. For any Automation client to be able to access the VBA object model programmatically, the user running the code must explicitly grant access. To turn on access, select the check box.



- Click OK, and the next OK.
- Restart Excel and open the Calculator.
- When you start up the Calculator, you should now get a 'Security Warning' under the ribbon
- Click the 'Options…' button
- Click 'Enable this content', followed by OK.
    - This enables macros to work for this document.
    - You will need to enable macros every time you open a Calculator in order for it to work.

If you still cannot run macros contact your local IT staff and please fill out a bug report to let BPA know of this problem in order to help others with this problem in the future.

Applicable versions: 2.X

29. I got a 'Run-time error '13', type mismatch

In order for the Calculator to know what mode you're in, you need to have the *project type* filled in on the *basic project details page*. Note that yellow cells are asking for information.

Project Name	Street Address	
606 X	606 X Ave.	
Sector	**Building Type**	**Project Type**
Industrial	Warehouse	

30. I'm using a Mac!

The Calculator, unfortunately, is only supported on the PC platform. The Office suite is significantly different enough that an entirely different set of macro instructions would need to be written to run on Macintoshes, which would more than double costs of development for a small subset of users.

31. Appendix

Bug Report Format

In the event that you have exhausted all of the FAQs in this document, here is the format for the bug report.

Example of Bug report

[ISSUE NAME]IMPROPER DROPDOWNS

- [short explanation] When I changed the Existing Fixture from the Sodium to a T5HO, the measure type only brought up Existing Fixtures and Controls Only as the option.
    - **States:** Started with a fresh calculator and didn't enter/change any of the project details. Entered the following data:

Deemed Lighting Measures [specify]

[Space Type]	ExistingFixtures	Exit Sign	Incandescent Lamps	25	2	10
	NewFixtures	LED	Exit/other Sign	6	1	10
	Controls	None				

    - **Relevant Tab**: Lighting Details tab.
    - **Environments**: Tested on local Excel 2003 on the Windows XP SP2 platform
    - **Issue:** Selected newFixtures: T5NLO was still the only option. Selected that with the only subtype available and attempted to change the existing fixture to T5HO. Selected the only available subtype and wattage and then attempted to change the newFixture. The Measure type is limited to Controls Only and Existing.
    - **Workaround**: use the Custom BPA-Qualified section (custom project)
    - **Replicated**: I have been able to reconstruct this error on multiple jobs. It seems to be a problem only in the Deemed Lighting section. I'm using version 2.067 of the calculator.

ISSUE DESCRIPTION GOES HERE

- Where it happened (include an attached version of your calculator) and short description
    - **Tab**:
    - **Environments**:
    - **Issue:**
    - **Workaround**:
    - **Replicated**:
    - Date found: